Work hours instability

Andrew Heisz and Sébastien LaRochelle-Côté

The labour market is perpetually in flux, with jobs constantly being created and destroyed in all industries. At the same time, workers are quitting, being laid off, moonlighting, and shifting between full-time work, part-time work, and no work. Nevertheless, many workers still manage to obtain secure, stable employment. These people are able to plan for the future. They can buy a house with some certainty of having enough earnings to meet the mortgage payments. They can feel confident enough to marry or start a family. They can rest soundly, knowing they are not likely to face a significant shortage of work in the near future. But what about those in less secure circumstances? How many workers are unable to secure stable employment? What are their work patterns? And what could be the consequences?

Static measures of the labour market such as the unemployment rate, the part-time employment rate or average job tenure hide as much as they reveal. For instance, knowing that 14% of workers worked 50 hours or more during a typical week in 2005 sheds no light on how many of those workers were overworked month after month. This paper examines the annual work hours of employees over a five-year period. This provides a parsimonious measure, combining job destruction, job change, change in weekly work hours, and multiple job holding into one indicator of overall worker well-being.

Annual work hours instability

The Survey of Labour and Income Dynamics (see *Data source and definitions*) provides annual work hours over successive years, thereby allowing an assessment of work hours instability. Examining work hours from a cross-sectional perspective first illustrates the advantage of looking at hours over several years (Table). More than half of employees worked a standard number of hours (1,750 to 2,199) in a year—52.5% in 1997 and 57.2% in 2001. Short hours were the second most common (28.1% and 24.7%) while long hours were relatively rare (12.4% and 12.2%). (Non-workers were not employed in the respective reference years, but were employed at some other time over the 1997-to-2001 period.)

Overall, the distribution of annual work hours looks remarkably stable. With no other information, it might be tempting to conclude that the same people worked long or short hours in both reference years. However,

The authors are with the Business and Labour Market Analysis Division. Andrew Heisz can be reached at 613-951-3748, and Sébastien LaRochelle-Côté at 613-951-0803 or both at perspectives@statcan.ca.

Table Employees by annual work hours

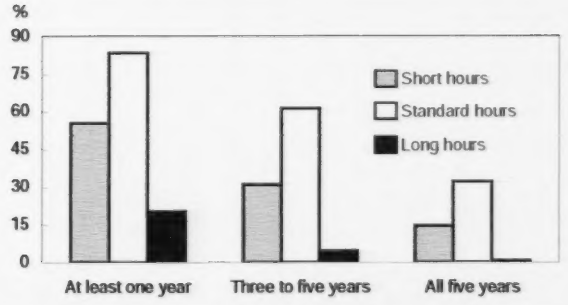
	1997	2001	Change
	%		
All individuals			
Non-workers	7.0	5.9	-1.1
1 to 1,199	16.7	12.8	-3.9
1,200 to 1,749	11.4	11.9	0.5
1,750 to 2,199	52.5	57.2	4.7
2,200 to 2,399	4.8	4.2	-0.6
2,400 or more	7.6	8.0	0.4
Men			
Non-workers	4.6	3.6	-1.0
1 to 1,199	9.8	6.5	-3.3
1,200 to 1,749	7.2	6.3	-0.9
1,750 to 2,199	60.8	66.0	5.2
2,200 to 2,399	6.3	6.1	-0.2
2,400 or more	11.3	11.4	0.1
Women			
Non-workers	9.5	8.2	-1.3
1 to 1,199	23.7	19.2	-4.5
1,200 to 1,749	15.7	17.6	1.9
1,750 to 2,199	44.0	48.1	4.1
2,200 to 2,399	3.2	2.3	-0.9
2,400 or more	3.8	4.5	0.7

Source: Statistics Canada, Survey of Labour and Income Dynamics

the longitudinal data show that stability in work hours over the years is not the norm. In at least one year between 1997 and 2001, more than half of all employees worked short hours, 4 in 5 worked standard hours, and 1 in 5 worked long hours (Chart A). However, the proportion that worked the same broad class of hours in each year was small compared with the cross-sectional results. In all, less than half worked in the same hours group in all five years, with one-third working standard hours, one-seventh working short hours, and less than 1% working long hours. Hence, many more workers experienced at least one year of short or long work hours than the cross-sectional results would suggest. But at the same time, chronic long or short hours were also much less common.

Clearly, many employees had variable annual work hours. This instability can be summarized with the mean absolute deviation of work hours, which gives the average absolute difference between an individual's work hours in a typical year and an actual year (see *Data source and definitions*). A worker with the same annual hours across the five years would have a mean absolute deviation of zero. The typical mean absolute deviation was 200 hours, indicating that the average worker had a variation in annual work hours of about five full-time weeks. However, work-hours variability was strongly polarized, with 1 in 5 having virtually none and 1 in 4 having variability exceeding eight weeks per year.

Chart A Less than half of workers were in the same annual work-hours category for all five years



Source: Statistics Canada, Survey of Labour and Income Dynamics, 1997 to 2001

Data source and definitions

This study uses the 1996 to 2001 longitudinal panel of the **Survey of Labour and Income Dynamics** (SLID). In SLID, hours worked are collected by asking workers how many hours they 'usually' work for pay during the week, including time off for holidays, paid sick or maternity leave, and usual paid overtime, but excluding unusual paid overtime and all unpaid hours. The information about weekly hours worked is put together with other information about weeks worked to compute individual estimates of annual hours worked. Unpaid absences are subtracted from usual work hours.

The study uses a sample of approximately 8,100 individuals aged 25 to 54 in 1997 who worked at least once between 1997 and 2001. It excludes immigrants who arrived after 1996, emigrants who left before 2001, and individuals who were not physically in the country at any point over the period. Self-employed workers were also excluded.

Standard hours: full-year, full-time (1,750 to 2,199 hours)

Short hours: low part-time, part-year (1 to 1,199 hours); high part-time, part-year (1,200 to 1,749 hours)

Long hours: long hours (2,200 to 2,399 hours); very long hours (2,400 hours or more)

Concepts and measurements
Representing annual hours as h, the mean absolute deviation is given by:

$$MAD_i = \left(\sum_{t=1}^{5} | h_{it} - \overline{h}_i | \right) \div 5$$

In this formula, h_{it} represents the annual hours of individual i in year t, and $\overline{h}_i$ is the annual hours for that same person averaged across all five years. Hence MAD_i simply gives the average absolute difference between an individual's work hours in a typical year and an actual year.

One group stands out as having extreme variability. These workers put in short hours in at least one year and long hours in at least one other. This group, the 'high-low' workers, accounted for less than 8% of the sample. Interestingly, two-thirds of the group managed to average a standard work schedule over the five years, but at the cost of greater instability in annual hours.

Variable work hours: a cause for concern?

Are variable work hours a cause for concern? Such a pattern may reflect a choice by workers to trade work time for leisure, or the phenomenon may be concentrated among certain highly paid professions in which sabbaticals are the norm. While such a distinction is

difficult to make with any certainty, looking at job characteristics can shed some light on the issue. The job-quality literature often divides the labour market into 'good' and 'bad' jobs. Good jobs have stable full-time hours, pension coverage and permanence, while bad jobs do not. But to what extent is having a bad job associated with highly variable work hours? If workers with high variability in work hours display characteristics associated with low job quality, it then becomes difficult to argue that such hours are their choice.

For example, lack of pension plan coverage, lack of union coverage, and working for a small firm are three characteristics commonly assumed to signal low job quality. In fact, employees in all three of these situations have more variable annual hours than others (Chart B). Those with no pension plan had a 62-hour greater deviation than those with pension coverage, those with no union coverage had a 48-hour greater deviation than unionized employees, and those in a small firm had a 67-hour greater deviation than those in a large firm.

Other characteristics of non-standard work were also associated with variable annual hours. For example, while the overall mean absolute deviation in annual work hours was 204, the deviation was 333 hours for multiple job holders and 272 hours for low-wage workers.

Work hours and well-being

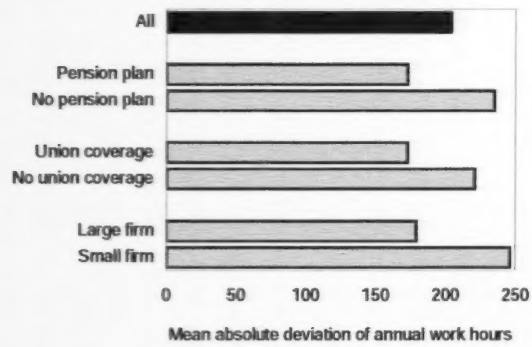
The desirability of having variable work hours may also be tested by looking to see if these workers have lower levels of well-being. That is, did employees with the highest deviation in hours (mean absolute deviation of 320 or more) have higher incidences of low income, low earnings, high stress or bad health than those with comparatively stable hours (mean absolute deviation of 60 hours or less)?

Work-hours instability was associated with having one or more spells of low income over the period; 22.5% of workers in the high deviation group experienced at least one year of low income compared with 5.8% of those in the stable hours group (Chart C). Variability was also associated with having low average annual earnings over the period; 39.2% of those in the high deviation group fell into the bottom quarter of annual earnings, compared with 15.3% in the stable group. Thus, employees with variable annual hours did not maintain a particularly high standard of living through averaging periods of over- and underwork.

The incidence of stress was also much higher in the high variability group. Some 47% of employees in this group reported feeling high stress compared with 34.5% of those with stable hours.

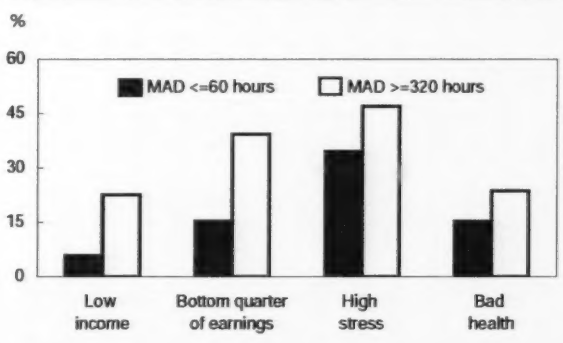
Finally, fully 23.6% of employees with highly varying work hours reported being in bad health at least once between 1997 and 2001 compared with 15.2% of those with stable work hours.

Chart B Workers with low job quality had more variable annual hours



Source: Statistics Canada, Survey of Labour and Income Dynamics, 1997 to 2001

Chart C Workers with variable annual hours had lower well-being



Source: Statistics Canada, Survey of Labour and Income Dynamics, 1997 to 2001

To test whether the relationship between working-hours variability and stress or bad health is spurious, a number of regressions controlling for background characteristics such as demographic factors, industry of employment, and job-quality factors were performed. The regressions also included a series of variables designed to assess the well-being of the individual at the beginning of the period, including a dummy variable indicating whether in 1996 the person lived in a low-income family, was very stressed, or was in bad health. The models also included the mean annual hours observed over the 1997-to-2001 period to account for the likelihood that stress and bad health were related to the levels of hours worked. The descriptive results regarding instability in annual hours and stress and bad health were robust and unaffected by background or initial well-being characteristics.

Conclusion

Discussions related to work hours are typically driven by cross-sectional studies. Much less is known about the persistence of long hours or periods of underemployment. If work hours for many employees are unstable, the possibility arises that time crunch or lack of work may be a smaller problem than the cross-sectional results imply. However, a lack of stability in work hours for individuals might itself be an indicator of low job quality or low well-being. The lack of studies examining the amount and consequences of variation in working hours over time has created a serious gap in our understanding of working time.

Employees face substantial variability in work hours. The occurrence is found more often among those with low-quality and non-standard jobs. Such workers also have higher incidences of low income, lower annual earnings, and a greater likelihood of being very stressed or in bad health. This suggests that it is fairly unlikely many employees are choosing to have variable annual work hours.

A number of policy prescriptions, driven by the polarization of hours seen in cross-sectional results, have called for reducing working time to control the rising trend in overwork. For example, concern over what was regarded as the inequitable allocation of working hours led to the creation in 1994 of the Advisory Group on Working Time and the Distribution of Work, whose report included the recommendation for "a new public policy priority that emphasizes redistribution and reduction in working time." (Canada 1994, 52). However, few people put in long work hours year after year. Indeed, for many, a period of overwork compensates for a period of underwork, with the end result being an average full-year, full-time work schedule. This lack of persistence in long work hours, plus the high level of individual work-hours variability would form a significant obstacle to the success of working-time regulation.

This study also provides a new perspective on work–life balance. Other research shows that having too many work hours is the most important contributor to stress (Higgins and Duxbury 2002). The present study adds that variation in annual work hours is also an important determinant of stress and bad health. This suggests that policies designed to reduce work-hours variability and not just reduce working time could also benefit workers.

Perspectives

References

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